Maine Department of Agriculture, Conservation and Forestry

2015 Cooperative Agricultural Pest Survey (CAPS) Program

Exotic Corn Pest Survey

If interested in participating, contact: karen.l.coluzzi@maine.gov

OLD WORLD BOLLWORM *Helicoverpa armigera*


The old world bollworm (OWB) is native to Asia and is now well established in Africa, Australia, Oceania, and most of southern Europe. It is not established in the U.S., although it has been intercepted at many U.S. ports over the years. OWB is genetically and morphologically similar to the corn earworm (*Helicoverpa zea*).

The host range of OWB is extremely broad, and includes a wide variety of fruits, vegetables, woody ornamentals, grains, weeds, and flowers. Significant economic loss has been reported on cotton, tomato, corn, and other high value crops. Because of its status as a pest of a number of crops, it has many common names, e.g. cotton bollworm, African bollworm, scarce-bordered straw worm, and tomato worm. Damage is caused by larval feeding on leaves, shoots, flowers, and fruits. Monitoring for this pest involves targeting the adult stage with pheromone traps.

The old world bollworm is considered a major threat to U.S. agriculture due to its broad host range, known economic damage in other countries, high entry and establishment potential, and high resistance to pesticides. Pheromone traps are used to detect its presence. For more information: **http://pest.ceris.purdue.edu/pest.php?code=ITBCFBA**

EGYPTIAN COTTONWORM *Spodoptera littoralis* and COTTON CUTWORM *Spodoptera litura*

These two *Spodoptera* species are native to Asia, Europe, Africa and the Middle East, where they go by a number of different names – cotton leafworm, tobacco cutworm, tomato caterpillar, as well as others. Experts finally differentiated them as different species based on adult genitalia differences. Although these pests have been intercepted at U.S. ports, there is no evidence of either becoming established.

Both species have broad host ranges. Major crops attacked include cotton, corn, rice, soybeans, cucurbits, potatoes, tomatoes, as well as a variety of ornamentals and other vegetables. Damage is due primarily to defoliation by the caterpillar, but cutworm-like damage also occurs on seedlings. Both species feed on the undersides of leaves causing feeding scars and skeletonization of leaves. Larvae also mine into young shoots causing the tips to wilt. Pheromone traps will be used to detect presence of this pest. For more information: *S. littoralis* - **http://pest.ceris.purdue.edu/pest.php?code=ITBCFPA**; *S. litura* - **http://pest.ceris.purdue.edu/pest.php?code=ITBCFMA**

FALSE CODLING MOTH *Thaumatotibia leucotreta*

The false codling moth is native to Africa, and has a wide range of wild and cultivated host plants, including corn. It is a pest of economic importance to many crops throughout its distribution, which primarily includes Africa and parts of the Middle East. False codling moth has been intercepted at ports of entry in several Northern European countries (e.g. the Netherlands, Finland and the UK), as well as in several U.S. states (e.g. California, New York, Massachusetts, and Texas).

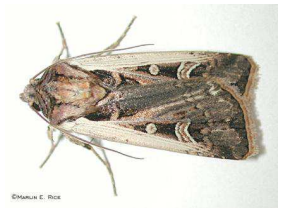
Damage to the host consists of premature ripening and fruit drop, which is caused by larval feeding and development. Adult moths are active at night and can be detected with pheromone traps. For more information: **http://pest.ceris.purdue.edu/pest.php?code=ITBUEUA**

NORTHERN CORN LEAF BLIGHT *Exserohilum turcicum*

Northern corn leaf blight is caused by the fungal agent, *Exserohilum turcicum*, and is prevalent on corn during periods of mild temperatures and high humidity. Early symptoms of northern corn leaf blight appear as long, narrow, tan lesions that form parallel to leaf margins. As these lesions develop, the classic symptoms of NCLB will be observed: long, oblong, or "cigar shaped" tan or grayish lesions, 1 to 7 inches long, depending on hybrid susceptibility. Multiple lesions may form on a leaf, and may coalesce to form large, irregular areas of dead tissue.

NCLB can cause yield loss if it develops before or during the silking stage. Hybrid susceptibility, cropping practices, and weather strongly influence disease development. Fungicide sprays are recommended for fresh market sweet corn. For more information: **https://www.extension.purdue.edu/extmedia/BP/BP-84-W.pdf**

WESTERN BEAN CUTWORM *Striacosta albicosta*

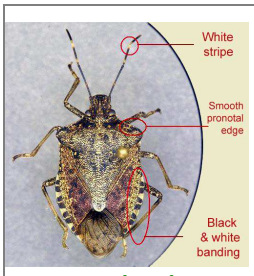


The western bean cutworm is a late season pest of corn (field, sweet, and popcorn), as well as dry and snap beans. It is native to North America but has recently expanded eastward from the Great Plains region. It was detected in Maine in 2012.

Moth emergence peaks around mid-July, when male moths can be monitored using pheromone traps. Female moths will mate and lay eggs during July and August and will oviposit on a variety of cultivated and wild plants, although dryland beans and field corn are the most commonly chosen oviposition sites. Cornfields in the late whorl stage are preferred by female moths, who are seeking to lay eggs on corn that is near (but not past) pollination. Damage is done to developing kernels in husks, or beans in pods, by feeding larvae. For more information: **http://ento.psu.edu/extension/field-crops-old/corn/western-bean-cutworm**

OTHER INVASIVES TO BE AWARE OF:

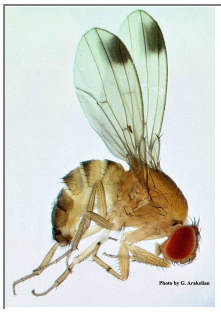
BROWN MARMORATED STINK BUG *Halyomorpha halys*



The brown marmorated stink bug (BMSB) has been in the U.S. for approximately 15 years and has caused considerable crop damage to preferred hosts, such as apple, peach, soybean, corn, sweet pepper and tomato, in many mid-Atlantic states. Its host range contains over 100 plant species, and it is established in approximately 30 states, the closest being New Hampshire. It has been intercepted in Maine twice in shipments of recreational vehicles from Maryland but there is no evidence of it being established here.

BMSB is also a nuisance pest as it seeks shelter during the fall and winter. Overwintering adults can congregate in large numbers as they seek to enter buidings and homes. Handling the bugs will cause them to emit a foul odor. In states where it has become a crop pest, BMSB was first reported as a nuisance pest. BMSB is a difficult pest to control as many pesticides are found to be ineffective. For more information: **www.stopbmsb.org**

SPOTTED WING DROSOPHILA *Drosophila suzukii*



A native of southeast Asia, the spotted wing drosophila (SWD) was first found in the continental U.S. in 2008 in California. It has since been detected in 28 states, including Maine.

SWD is known as a vinegar fly, but unlike most vinegar flies that infest overripe fruit, SWD attacks ripening fruit. California, Oregon, Florida and Michigan have reported significant crop losses to their small fruit industry, which includes strawberry, blueberry, raspberry and cherry. Other fruits at risk include apple, peach, plum, blackberry and possibly tomato.

SWD can be identified by the single black spot on each wing margin of males, and the distinct serrated ovipositor of females, which allows this fly to attack ripening fruit. Within days of attack, fruit begins to collapse and rot. For more information: **http://pest.ceris.purdue.edu/pest.php?code=IOAPAUA**

WINTER MOTH *Operophtera brumata*

Winter moth is of European origin and was discovered in Nova Scotia Canada in the 1950s. Separate introductions to the Pacific Northwest have led to pest populations that warranted control measures, especially in commercial blueberries. It is a major defoliator pest in Massachusetts, and has recently been disovered causing severe defoliation in Vinalhaven and Harpswell, ME. Winter moth also attacks oak, maple, crabapple, apple, cherry, and other trees.

Adult moths are present in late fall through winter. Males take flight to find and mate with flightless females. The larval stage is the most destructive. Newly hatched caterpillars feed on developing buds in the spring causing the expanding foliage to be riddled with holes. Severe defoliation over several years can lead to tree mortality. For more information:
http://www.maine.gov/dacf/mfs/forest_health/documents/winter_moth.pdf

Photo Credits:
Old world bollworm, adult: Gyorgy Csoka (Hungary Forest Research Institute); larva: Central Science Laboratory, Harpenden Archive (British Crown)
Egyptian cottonworm, adult: Bernard Fransen (Netherlands); larva: Biologische Bundesanstalt für Land- und Forstwirtschaft Archive (Germany)
Cotton cutworm, adult and larva: Merle Shepard, Gerald R.Carner, and P.A.C Ooi (U.S.)
False codling moth: Marja van der Straten (NVWA Plant Protection Service)
Northern Corn Leaf Blight: Paul Bachi, University of Kentucky Research and Education Center, Bugwood.org
Western bean cutworm: Marlin E. Rice
Brown marmorated stink bug: Rutgers - New Jersey Agricultural Experiment Station
Spotted wing drosophila: Gevork Arakelian (Los Angeles County Agricultural Commissioner/Weights & Measures Department)
Winter moth: Bob Childs (University of Massachusetts)